REMARKS

Claims 1-9 and 25-33 are pending in this application.

Applicants wish to thank the Examiner for withdrawing the obviousness-type double patenting rejection from the last Office Action.

Applicants respectfully submit that the remaining rejections should also be withdrawn for the following reasons.

I.   Claims 1, 2, 9, 25, 26 and 33

The Office Action continues to reject claims 1, 2, 9, 25, 26 and 33 under 35 U.S.C. § 103(a) as being unpatentable over the article by Bhattacharya et al. ("Bhattacharya") in view of U.S. Patent No. 6,785,690 ("Davidson"). The issue with respect to these claims is easy to frame:

1)   Independent claims 1 and 25 recite "storing the data in . . . at least one designated field of [a] plurality of fields of [an] instance of [a] user defined type as a file outside of [a] database store" while "storing the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store."

2)   The Examiner asserts that Davidson teaches that an instance of a user-defined type having a plurality of fields can be persisted in a database store;

3)   Bhattacharya describes the "DB2/DataLinks" product available from IBM which, as recognized in the Background section of the instant application, provides the ability to link a *column entry* in a database *table* to a file in a file system by storing a reference (*e.g.*, URL) to the file in the *column entry* of the *table*; and

4)   The Examiner asserts, but applicants disagree, that combining Bhattacharya with Davidson to arrive at the claimed invention would have been obvious to one of ordinary skill in art.

Applicants submit that the asserted combination is improper because (i) merely combining the teachings of these references does not produce the claimed invention, and (ii) the Examiner still has not provided sufficient evidence of a motivation to combine the references in a manner that would produce the claimed invention.

A. Merely Combining Bhattacharya And Davidson Does Not Result In The Claimed Invention

All that Bhattacharya describes is linking a *column entry* in a database *table* to a file in a file system by storing a reference (*e.g.,* URL) to the file in the *column entry* of the *table*. A database *table* is not an instance of a "user-defined type," nor is a *column entry* of such a table a "field" of a user-defined type. Consequently, merely combining Davidson with Bhattacharya would not produce the claimed invention. All that would result from such a combination is a system in which an instance of a user-defined type having a plurality of fields can be persisted in a database (as taught by Davidson), and in which *column entries* in a database *table* can be linked to a file in a file system by storing a reference (*e.g.,* URL) to the file in the *column entry* of the *table* (as taught by Bhattacharya). That does not result in the claimed invention. Rather, to arrive at the claimed invention, one would have to modify the basic notion of a user-defined type as described in Davidson, by adding the claimed ability to store the data in a designated *field* of an instance of a user defined type as a file outside of the database store, while storing the data in each of the other fields of the instance within the database store. That is *not* an insignificant modification. Applicants respectfully submit that there is nothing in either reference, nor in the general knowledge of one skilled in the art, that would have motivated a skilled artisan to make such a significant modification.

B. There Is No Motivation To Combine Davidson and Bhattacharya In A Manner That Would Produce The Claimed Invention

In response to applicants' prior assertion that the Examiner has not provided sufficient evidence of a motivation to combine the references, the Examiner now asserts that "[t]he motivation to combine Davidson with Bhattacharya is that the user-defined data type are safe and secured because they are stored externally from the database," and that "in case of disaster or system failure, these data can easily be retrieved from the external data store." Applicants respectfully disagree.

A desire for data protection would not motivate someone to implement the claimed invention. If data protection were desired, that desire would extend to all of the fields of an instance of a user-defined type. However, with the claimed invention, only *some* of the fields of an instance of a user-defined type are stored *outside* of the database store, while the other fields of that same instance are stored *within* the database store. Storing only *some* of the

fields of a user-defined type outside of the database store would not fully address any desire for data protection. Indeed, in the Abstract of the Bhattacharya article, the author points out that "[m]anaging a combined store consisting of database data and file data ... is a *challenge*" and that "backup/recovery and data consistency" are "two potentially *problematic* aspects of such a data management system." Thus, as Bhattacharya recognizes, a desire for data protection would *not* be a motivation for combining Davidson and Bhattacharya to produce the claimed invention, but instead is a *problem* to address.

The Examiner has not identified any statement or discussion in either of the cited references or elsewhere that would have motivated one of ordinary skill to modify the basic notion of a user-defined type, as described in Davidson, to add the claimed ability to store the data in at least one designated field of an instance of a user defined type as a file outside of the database store, while storing the data in each of the other fields within the database store. Davidson certainly does not recognize a need for such a capability, and neither does Bhattacharya. Bhattacharya deals with database tables and column entries, not user-defined types.

Applicants respectfully submit that the Examiner has not provided any evidence from the references themselves or otherwise that would provide the required motivation to combine. And as explained above, the Examiner's assertion that a desire for data protection would provide such motivation is incorrect. Because there is no evidence of record that one of ordinary skill in the art would have been motivated to make the asserted combination, that combination cannot serve as the basis for a rejection under Section 103(a).

For all the foregoing reasons, therefore, applicants respectfully request that the Section 103(a) rejection of claims 1, 2, 9, 25, 26 and 33 be withdrawn.

II.   Claims 3-8 and 27-32

Claims 3-8 and 27-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhattacharya and Davidson and further in view of U.S. Patent 6,070,174 ("Starek"). Inasmuch as these claims depend, either directly or indirectly, from one of independent claims 1 and 25, applicants submit that they are patentable for the same reasons as presented above with respect to those independent claims. Nevertheless, with respect to many of these

dependent claims, applicants submit that the rejections are improper for the following additional reasons.

A.   Claims 3 and 27

Claims 3 and 27 recite that the data of the fields of the object that are stored *within* the database store are stored as fragments within a column of a database table that has been designated as having the user defined type. The Office Action asserts that Starek teaches this feature at column 10, lines 29-51. Applicants do not understand how. That portion of Starek describes a "master file table" of an operating system that stores "file records" for the files stored in the operating system's file system. Claims 3 and 27 have nothing to do with files or file systems. Consequently, Applicants do not understand how combining this aspect of Starek with Davidson and Bhattacharya would produce the invention recited in claims 3 and 27. Moreover, because claims 3 and 27 have nothing to do with files or file systems, the discussion in the Office Action of a "motivation" for combining Starek with Davidson and Bhattacharya, which focuses on file system features, does not make sense. Reconsideration of the rejection of claims 3 and 27 is respectfully requested for these additional reasons.

B.   Claims 4 and 28

Claims 4 and 28 recite that "a unique identifier associated with the object" is stored "in another column of the table in a same row as the data of the fields of the object." The Office Action asserts that this feature is taught by Bhattacharya's description of a *"RecoveryID_at_link"* identifier. The *RecoveryID_at_link* identifier is described as a "time based recovery identifier." But there is no indication in Bhattacharya that this identifier is associated with an object, *i.e.,* an instance of a user defined type, that has been stored in a column of a database table, as claimed by applicants. Applicants respectfully submit, therefore, that Bhattacharya does not teach the claimed identifier. For that reason alone, the rejection of these claims should be withdrawn.

Moreover, to the extent that this rejection again requires the combination of multiple references, the Examiner is required to state a motivation for combining the *RecoveryID_at_link* feature of Bhattacharya with the other references. In this case, the Examiner has provided **no evidence of any motivation whatsoever**. Consequently, the rejection is improper and must be withdrawn.

C.   Claims 5 and 29

Claims 5 and 29 recite that the data in the designated field of the object that is stored outside of the database "is stored as a file within a predetermined directory of a file system of a computer on which the database server is executing." The Office Action asserts that this feature is taught by Starek at column 10, lines 14-18. That portion of Starek states:

> An NTFS volume, however, stores all file system data, such as
> bitmaps and directories, and even the system bootstrap, as
> ordinary files. NTFS is like the FAT file system in that it uses
> the cluster as its fundamental unit of disk allocation.

Applicants do not understand how this portion of Starek teaches the claimed feature. Nothing in the cited portion of Starek has anything to do with user-defined types, let alone storing a designated field of an instance of a user-defined type outside of a database store as a file "within a predetermined directory of a file system." Moreover, the Examiner has again failed to provide *any* evidence of a motivation to combine this aspect of Starek with the claimed invention. For these reasons, the rejection is improper and should be withdrawn.

D.   Claims 7 and 31

Claims 7 and 31, which depend from claims 6 and 30, respectively, recite the steps that are performed when an application requests access, via the file system of a computer, to the file in which the data of a designated field of a user-defined type is stored outside the database store. In particular, while access is made via the file system, these claims recite that the request for access to the file identifies the file *not* by its identity within the file system, but by identifying "the field of the object [for which the file holds data] ... within the *database store*," and then "determining from the identity of the field of the object within the database store a path within the file system of the computer to the file containing the data of that field of the object." The Office Action asserts that Starek teaches these claimed steps at column 7, lines 9-20 and column 4, lines 23-32. But none of these portions of Starek describe accessing a file via a file system, where the file is identified *not* by its identity in the file system, but rather by identifying the field of an object within a database store for which the file holds data. Because Starek does not teach the claimed feature, the rejection should be withdrawn.

Moreover, to the extent that this rejection again requires the combination of multiple references, the Examiner has again failed to provide *any* evidence of a motivation to make
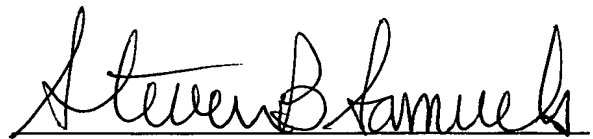
the asserted combination. For this additional reason, the rejection is improper and must be withdrawn.

For all the foregoing reasons, applicants respectfully request that the Section 103(a) rejections of claims 3-8 and 27-32 be withdrawn. With respect to claims 4, 5, 7, 28, 29 and 31 in particular, the failure of the Examiner to provide evidence of a motivation for the asserted combinations renders those rejections improper. **If the Examiner believes that a motivation to combine exists, then applicants submit that the Examiner should withdraw the finality of the present Office Action and provide the applicants with an opportunity to respond to any asserted motivation to combine.**

CONCLUSION

For the foregoing reasons, applicants respectfully submit that all of the claims patentably define over the cited art of record, and therefore, that the instant application is in condition for allowance. Reconsideration of the May 30, 2006 Office Action and an early Notice of Allowance are earnestly solicited.

Respectfully submitted,

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